

WHAT IS CLAIMED IS:

1. An image processing apparatus comprising:  
a photoelectric conversion unit including a pixel;  
and  
5 noise correction means for correcting noises in a  
signal output from a pixel in accordance with noise  
information obtained from the pixel during two or more  
arbitrary different accumulation times.
- 10 2. An image processing apparatus according to  
claim 1, wherein said photoelectric conversion unit  
includes a plurality of pixels.
- 15 3. An image processing apparatus according to  
claim 1, further comprising storage means for storing  
the noise information.
- 20 4. An image processing apparatus according to  
claim 1, further comprising counter means for counting  
the accumulation time of said photoelectric conversion  
unit.
- 25 5. An image processing apparatus according to  
claim 1, wherein said noise correction means includes  
calculation means for calculating noise information  
dependent upon the accumulation time and noise  
information independent from the accumulation time, in

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accordance with the noise information of the pixel obtained during the two or more arbitrary different accumulation times.

5           6. An image processing apparatus according to claim 5, wherein said noise correction means calculates a difference between a noise signal dependent upon the accumulation time in the signal output from the pixel and a noise signal independent from the accumulation  
10           time in the signal output from the pixel.

              7. An image processing apparatus comprising:  
              a photoelectric conversion unit including a plurality of pixels;  
15           storage means for storing noise information of the pixel independent from an accumulation time and noise information of the pixel dependent upon the accumulation time; and

              noise correction means for correcting noises in a  
20           signal output from said photoelectric conversion unit in accordance with the noise information stored in said storage means.

              8. An image processing apparatus according to  
25           claim 7, further comprising counter means for counting the accumulation time of the pixel.

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9. An image processing apparatus according to claim 7, wherein said noise correction means calculates a difference between a noise signal dependent upon the accumulation time in the signal output from the pixel and a noise signal independent from the accumulation time in the signal output from the pixel.

10. An automatic focus detecting apparatus comprising:

10 a photoelectric conversion unit including a plurality of pixels;

noise correction means for correcting noises in a signal output from the pixel in accordance with noise information of the pixel obtained during two or more arbitrary different accumulation times; and

15 distance measurement calculation means for performing a distance measurement calculation in accordance with a signal corrected by said noise correction means.

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11. An automatic focus detecting apparatus comprising:

a photoelectric conversion unit including a plurality of pixels;

25 storage means for storing noise information of a pixel independent from an accumulation time and noise information of a pixel dependent upon the accumulation

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time;

noise correction means for correcting noise in a  
signal output from said photoelectric conversion unit  
in accordance with the respective noise information  
5 stored in said storage means; and

distance measurement calculation means for  
performing a distance measurement calculation in  
accordance with a signal corrected by said noise  
correction means.

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12. An automatic focus detecting apparatus  
according to claim 10, wherein said photoelectric  
conversion unit has a plurality of area sensor units  
disposed on a two-dimensional plane, each area sensor  
15 unit including a plurality of pixels disposed two-  
dimensionally.

13. A noise correction apparatus comprising:  
noise correction means for correcting noises from  
20 a signal output from a pixel in a photoelectric  
conversion unit, in accordance with noise information  
of the pixel obtained during two or more arbitrary  
different accumulation times.

25 14. A noise correction apparatus according to  
claim 13, further comprising:

calculation means for calculating noise

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information dependent upon the accumulation time and noise information independent from the accumulation time, in accordance with the noise information of the pixel obtained during the two or more arbitrary different accumulation times; and

means for calculating a difference between a noise signal dependent upon the accumulation time in the signal output from the pixel and a noise signal independent from the accumulation time in the signal output from the pixel.

15. A noise correction method comprising the step of correcting noises from a signal output from a pixel in a photoelectric conversion unit, in accordance with noise information of the pixel obtained during two or more arbitrary different accumulation times.

16. A noise correction method according to claim 15, further comprising the steps of:

calculating noise information dependent upon the accumulation time and noise information independent from the accumulation time, in accordance with the noise information of the pixel obtained during the two or more arbitrary different accumulation times; and

calculating a difference between a noise signal dependent upon the accumulation time in the signal output from the pixel and a noise signal independent

17. A storage medium storing a program comprising the step of correcting noises from a signal output from a pixel in a photoelectric conversion unit, in accordance with noise information of the pixel obtained during two or more arbitrary different accumulation times.

calculating noise information dependent upon the accumulation time and noise information independent from the accumulation time, in accordance with the noise information of the pixel obtained during the two or more arbitrary different accumulation times; and

calculating a difference between a noise signal dependent upon the accumulation time in the signal output from the pixel and a noise signal independent from the accumulation time in the signal output from the pixel.